# *Hydrologic Model Manager*

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| **Short Name** | ANSWERS |
| **Long Name** | Areal Nonpoint Source Watershed Environmental Simulation |
| **Description** | |
| **Model Type** | Continuous simulation, distributed parameter |
| **Model Objectives** | Simulate the impacts of watershed management practices on runoff, sediment, and nutrient losses |
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| **Model Structure** | Distributed model, using an explicit solution to the continuity equation |
| **Interception** | |
| **Groundwater** | |
| **Snowmelt** | |
| **Precipitation** | |
| **Evapo-transpiration** | |
| **Infiltration** | |
| **Model Paramters** | |
| **Spatial Scale** | less than 100 km2, with a maximum cell size of about 1.0 ha. |
| **Temporal Scale** | continuous simulation, 30-sec time step during storms, daily time step between storms |
| **Input Requirements** | Topography, textural soil map, land use map along with management description, breakpoint rainfall and daily mean air temperature and solar radiation |
| **Computer Requirements** | Desktop PC (Pentium II or equivalent) |
| **Model Output** | time series of runoff rates and sediment and nutrient concentrations; cumulative runoff, sediment load and nutrient yields; dissolved and sediment-bound nitrogen and phosphorus losses; considers particle size distribution of eroded sediment. |
| **Parameter Estimatn Model Calibrtn** | No routine available for auto-calibration. The model is interfaced with Arc-View decision support system, which assists the user in selecting input parameters. |
| **Model Testing Verification** | Yes |
| **Model Sensitivity** | Numerous studies - Dillaha (1983); Bouraoui (1994); Byne, 2000) |
| **Model Reliabiity** | the model was developed for management purposes. The quality of the information produced depends heavily of the input data availability and quality |
| **Model Application** | Successful applications for evaluation of BMPs in construction sites in Indiana, nutrient loads estimation in agricultural watersheds in Virginia, rainfall-runoff modeling in the Andes mountains |
| **Documentation** | Limited |
| **Other Comments** | More user-friendly, GIS interfaced version of model available in 2001. The model is in the public domain, but user support is very limited |

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| **Date of Submission** | 5/8/2001 12:23:36 PM |
| **Developer** | |
| **Technical Contact** | |
| **Contact Organization** | |